THE SOURCE

NEWSLETTER OF THE NHDES DRINKING WATER SOURCE PROTECTION PROGRAM
ON THE WEB AT WWW.DES.STATE.NH.US/DWSPP

WINTER 2003

New Hampshire's Source Assessments Done!

New Hampshire's Drinking Water Source Assessment Program expects to complete assessments of all 2,911 public water supply sources (in service as of December 31, 2001) by the time you read this issue. As of late-December 2002, when we went to press, 99.9 percent or 2,908 sources, including all of the state's surface water sources, had completed assessments, available for viewing at www.des.state.nh.us/dwspp/reports.htm. The federal deadline for states to complete and distribute all assessment reports is May 2003. Highlights of the past year include:

- Completion of field work for all groundwater sources.
- Completion of phosphorus loading analysis for 25 water supply lakes, ponds, and reservoirs.
- Publication of a USGS report on time-of-travel studies for 12 water supply rivers.
- Addition of summary tables (like the one below) to our website at www.des.state.nh.us/summaries.htm enables viewers to compare results of individual assessments to the overall results for each type of system. For example, the average community water source had approximately eight low, two medium, and two high vulnerability factors. And the fac-

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System Type	Average Number of Susceptibility Rankings		
	Highs	Mediums	Lows
Community	1.9	2	7.8
Non-Transient, Non-Community	2.8	2.5	6.7
Transient	1.8	N/A	7.2

Average rankings of all sources with assessments completed as of December 20, 2002 (99.9% of source assessments completed).

Reminder to Community Public Water Systems serving 3,300 people or less

Emergency Plans due to DES by March 15, 2003

For information, visit our Water System Security page at www.des.state.nh.us/wseb or contact Johnna McKenna at 271-7017.

Seven Apply for Land Grant Funding

Seven conservation project proposals, totaling more than $2 million, recently requested funding from DES's Water Supply Land Conservation Grant Program for the fall grant round. As this issue went to print, program staff were reviewing these projects which, if funded, would protect 1,215 acres of critical water supply land.

The proposals received involve several innovative projects and partnerships. One such project would protect a farm property slated for development that lies within the source water protection area of a large community water supply. Another project involving protection of 603 acres in the source water protection area of a municipal source is part of an overall community land protection effort for which a group of town residents is

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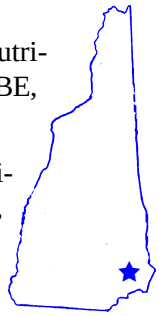
Spotlight on ... UNH/Durham

By Brian Gallagher, UNH WTP

The Oyster River has been the primary source of drinking water for the University of New Hampshire and the Town of Durham since 1935. Encompassing five towns, the Oyster River watershed is mostly rural and residential, with the exception of NH Route 4 and the Lee traffic circle. In 2000, the newly formed Oyster River Watershed Association (ORWA) and the UNH water system (which supplies water to Durham) came together to conduct a volunteer water quality monitoring program after a study by UNH's Jackson Laboratory identified a number of water quality issues in the watershed.

Among the known water quality issues were high suspended sediment levels throughout the watershed, significant loadings of pollutants from stormwater outfalls, and high MtBE levels in groundwater near the Lee traffic circle. With a Local Source Water Protection Grant from DES and technical support from DES's Volunteer River Assessment Program (VRAP), ORWA formed and fielded volunteer river assessment teams and coordinated public outreach and education efforts. The UNH Water Treatment Plant was the base of operations for the project: a place for storage, maintenance, and calibration of monitoring and sampling equipment; home for documentation, records, and data entry; the preparer of a Quality Assurance Project Plan; and the laboratory for analysis of several monitoring parameters. DES grant money was used to pay for outside laboratory testing of nutrients, E. coli, anions, cations, and MtBE, and for public outreach costs.



To move the project from monitoring to improved river protection, UNH and ORWA conducted public education activities, including monthly presentations to ORWA members and a traveling display of monitoring results. They also worked with UNH students to construct and maintain an educational kiosk near the Oyster River water supply impoundment.

UNH and ORWA are now completing their second season of baseline monitoring. The Oyster River is still relatively clean, but it is clear that land use activities have a strong impact on water quality. The test results show that there are some nonpoint sources of pollution in the watershed. Development in the area of the Lee traffic circle is still a concern, although it was welcome news that no MtBE was detected in the river samples.

The Oyster River project was made possible only by the partnership among the many volunteers from the ORWA, the UNH WTP, and by the resources, guidance, and encouragement from DES. The UNH WTP and the ORWA plan to continue collecting information about watershed conditions and to respond — most effectively at the local level — to that information.

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tor that most often earned a high vulnerability ranking for a community source was the density of septic systems or the presence of sewer lines in the source protection area.

- Expanded explanations of susceptibility rankings added to the town summary tables at www.des.state.nh.us/dwspp/part1.htm. Now, at the end of each table, you can find out what each of the High, Medium, or Low rankings mean.

The next challenge facing the Drinking Water Source Protection Program is making sure the source assessments spur water suppliers and municipalities to improve local protection programs.

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New Resources of Interest

Innovative Stormwater Treatment Technologies BMP Manual Available from DES

DES's Watershed Management Bureau recently published the *Innovative Stormwater Treatment Technologies — Best Management Practices Manual*. This publication aims to make information about innovative stormwater treatment technologies more readily available to New Hampshire's urban planners, developers, and communities. The manual offers detailed product information including function, installation, operation and maintenance, and relative cost of some of the latest stormwater treatment technologies. To help sift through the various new technologies, it also offers decision-making criteria to help determine the most efficient BMP system for specific site conditions. The *Innovative Stormwater Treatment Technologies — Best Management Practices Manual* can be found at www.des.state.nh.us/wmb/was/manual/

DES Small Public Water Supply Help Center Offers Assessment Form

A new public water system checklist and self-assessment form containing 23 questions about source water protection and emergency preparedness is now available from DES's Capacity Development Program (also known as the Small Public Water Supply Help Center). The assessment form contains a series of yes/no questions intended to help owners and operators identify and prepare for operating costs and major improvement costs.

DES's Capacity Development Program provides information and guidance to drinking water systems on all aspects of operating a small public water system. For more information or a copy of the form, visit www.des.state.nh.us/wseb/capacity/ or contact Jim Hewitt at 271-3108 or jhewitt@des.state.nh.us.

'Tis the Season for De-Icing New Bulletins Available from EPA

Two new source water protection practices bulletins addressing highway deicing and airport/aircraft deicing were recently published on EPA's Source Water Protection website. The bulletins are based on materials researched and compiled in New England and can be downloaded at www.epa.gov/safewater/protect/swpbull.html. This same site also contains several other source water protection practices bulletins including advice for management of stormwater runoff, pet and animal wastes, septic systems, storage tanks, and more.

USGS Unveils Well Yield Report and New WaterWatch Website

A new report, "Factors related to well yield in the fractured-bedrock aquifer of New Hampshire," is now available from the U.S. Geological Survey. This report is the final installation of a multi-year study that was conducted in cooperation with DES. The report includes a multivariate regression model that statistically quantifies the relationship of several variables to well yield. The study was intended to assist consultants, planners, and water professionals with identifying areas that may produce statistically higher yielding wells. To obtain a copy, contact Debra Foster at 226-7837.

The U.S. Geological Survey also recently unveiled its new WaterWatch website, which gives visitors an instant picture of water conditions nationwide in near- real time. Through the use of USGS WaterWatch maps, current streamflow conditions, including high flood-flows and low drought-flows are depicted on maps with color-coded dots which represent conditions at about 3,000 streamgages nationwide. The WaterWatch website can be accessed at http://water.usgs.gov/waterwatch/.

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offering to place conservation easements on their land as match for the grant funds. A third innovative project includes a tri-town bi-county application which proposes protecting four abutting parcels that lie in two source water protection areas. These are just a few examples of the creative projects for which we have received applications in Round Three.

DES anticipates another grant round in Spring 2003. **The deadline for the spring grant round is February 1 for Project Eligibility Applications and April 1 for Final Applications.** For more information about the Water Supply Land Grant Program, visit www.des.state.nh.us/acqui.htm or contact Sherry Godlewski at 271-0688 or sgodlewski@des.state.nh.us.

New Water Conservation Initiatives In New Hampshire

"Hundreds of industrial, commercial and institutional facilities have reported water savings from conservation measures to range from a low of 10% to a high of more than 90% of previous water use."

-Amy Vickers, "Handbook for Water Use and Conservation"

Over the last five years, several occurrences of drought, controversial applications for large groundwater withdrawals, and water use restrictions imposed in several New Hampshire communities have brought water conservation into the spotlight. Yet, a 2001 DES survey of community water systems and businesses using in excess of 20,000 gallons of water per day revealed that 83 percent of water systems and 70 percent of businesses implement no or very limited water conservation measures. The survey also revealed that approximately one-half of the water systems and businesses surveyed are concerned about potential water supply shortages.

Water conservation is often looked to during times of drought or water supply emergencies. However even during times of ample supply, water conservation has many benefits. For instance, water quality is directly related to water quantity due to the fact that overused water sources are more susceptible to changes in natural water quality, cannot provide needed dilution for wastewater discharges, and become more susceptible to point and nonpoint pollution sources. Increased water demands can also impact sensitive environmental resources (e.g. wetlands), which are critical for maintaining long-term water quality in a watershed.

Water conservation is also cost effective. According to Amy Vickers, author of *Handbook of Water Use and Conservation* and a recognized expert in the field of water conservation, "Hundreds of industrial, commercial and institutional facilities have reported water savings from conservation measures to range from a low of 10 percent to a high of more than 90 percent of previous water use. Payback periods are usually between one and four years, with the typical time less than two and a half years."

DES offers many resources to aid utilities, residents, and businesses with their water conservation efforts. Case studies of water efficiency measures implemented at various New Hampshire facilities are available and confirm Vickers's findings. A model water use restriction ordinance for public water systems is also available. Finally, DES has also developed a series of 17 water efficiency fact sheets to assist various water users such as health care facilities, public utilities, golf courses, and others with learning how to beneficially reduce water losses, waste, or use. All of these resources are available at www.des.state.nh.us/h2o_conservation.htm or by contacting 271-2975.

In the upcoming year, water conservation will become integrated with the existing regulatory processes for water supply projects as required by Senate Bill 440, signed during the 2002 Legislative Session. This bill requires DES to develop water conservation rules which will apply to new community water system withdrawals, large groundwater withdrawals, or surface water withdrawals requiring a 401 Water Quality Certificate. This winter, DES will convene an advisory committee to assist with the rulemaking process.

For more information regarding water conservation in New Hampshire, contact Brandon Kernen at 271-0660 or bkernen@des.state.nh.us.

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